

The Source: Data Measuring the Economic Efficiency of Slavery in the Antebellum South

Historians have tried to measure the efficiency of slave labor in the antebellum South in a number of ways: output (how much Southern farms produced), technology (how intensively those farms used tools and machines to improve their production), wealth and income (how much that production earned for the South's free and enslaved populations), and urbanization and manufacturing (how rapidly nonagricultural sectors of the economy grew). All of these measures involve comparing the South to other states, regions, or nations, most typically to the free states of the North.

OUTPUT

In *The Impending Crisis*, Hinton Helper included more than fifty tables comparing the economic output of the North and the South. His primary source of data for these tables was the U.S. census of 1850. The following three tables offer examples of how he organized his data to emphasize the difference in outputs between free labor in the North and slave labor in the South.

1

**Agricultural Bushel-Measure Products
of Free and Slave States, 1850**

Source: The tables in Sources 1, 2, and 3 are from Hinton R. Helper, *The Impending Crisis of the South: How to Meet It* (New York: Burdick Brothers, 1857), 39.

| Free States | Bushels | Price per Bushel | Value |
|---------------------------------------|--------------------|------------------|-----------------------|
| Wheat | 72,157,486 | 1.50 | \$ 108,236,229 |
| Oats | 96,590,371 | 0.40 | 38,636,148 |
| Indian Corn | 242,618,650 | 0.60 | 145,571,190 |
| Potatoes (Irish ¹ & Sweet) | 59,033,170 | 0.38 | 22,432,604 |
| Rye | 12,574,623 | 1.00 | 12,574,623 |
| Barley | 5,002,013 | 0.90 | 4,501,811 |
| Buckwheat | 8,550,245 | 0.50 | 4,275,122 |
| Beans & Peas | 1,542,295 | 1.75 | 2,699,015 |
| Clover & Grass Seeds | 762,265 | 3.00 | 2,286,795 |
| Flax Seeds | 358,923 | 1.25 | 448,647 |
| Garden Products | | | 3,714,605 |
| Orchard Products | | | 6,332,914 |
| Total | 499,190,041 | | \$ 351,709,703 |

| Slave States | Bushels | Price per Bushel | Value |
|--------------------------|--------------------|------------------|-----------------------|
| Wheat | 27,904,476 | 1.50 | \$ 41,856,714 |
| Oats | 49,822,799 | 0.40 | 19,953,191 |
| Indian Corn | 348,992,282 | 0.60 | 209,395,369 |
| Potatoes (Irish & Sweet) | 44,847,420 | 0.38 | 17,042,019 |
| Rye | 1,608,240 | 1.00 | 1,608,240 |
| Barley | 161,907 | 0.90 | 145,716 |
| Buckwheat | 405,357 | 0.50 | 202,678 |
| Beans & Peas | 7,637,227 | 1.75 | 13,365,147 |
| Clover & Grass Seeds | 123,517 | 3.00 | 370,551 |
| Flax Seeds | 203,484 | 1.25 | 254,355 |
| Garden Products | | | 1,377,260 |
| Orchard Products | | | 1,355,827 |
| Total | 481,766,889 | | \$ 306,927,067 |

¹ White.

2

*Value of Farms and Domestic Animals
in Free and Slave States, 1850*

| Free States | Value of Livestock | Value of Animals Slaughtered | Cash Value of Farms, Farm Implements, and Machines |
|--------------|--------------------|------------------------------|--|
| California | \$ 3,351,058 | \$ 107,178 | \$ 3,977,524 |
| Connecticut | 7,467,490 | 2,202,266 | 74,618,963 |
| Illinois | 24,209,258 | 4,972,286 | 102,538,851 |
| Indiana | 22,478,555 | 6,567,935 | 143,089,617 |
| Iowa | 3,689,275 | 821,164 | 17,830,436 |
| Maine | 9,705,726 | 1,646,773 | 57,146,305 |
| Mass. | 9,647,710 | 2,500,924 | 112,285,931 |
| Michigan | 8,008,734 | 1,328,327 | 54,763,817 |
| N. Hampshire | 8,871,901 | 1,522,873 | 57,560,122 |
| N. Jersey | 10,679,291 | 2,638,552 | 124,663,014 |
| New York | 73,570,499 | 13,573,883 | 576,631,568 |
| Ohio | 44,121,741 | 7,439,243 | 371,509,188 |
| Pennsylvania | 41,500,053 | 8,219,848 | 422,598,640 |
| Rhode Island | 1,532,637 | 667,486 | 17,568,003 |
| Vermont | 12,643,228 | 1,861,336 | 66,106,509 |
| Wisconsin | 4,897,385 | 920,178 | 30,170,131 |
| Total | \$ 286,376,541 | \$ 56,990,237 | \$ 2,233,058,619 |

| Slave States | Value of Livestock | Value of Animals Slaughtered | Cash Value of Farms, Farm Implements, and Machines |
|--------------|--------------------|------------------------------|--|
| Alabama | \$ 21,690,112 | \$ 4,823,485 | \$ 69,448,887 |
| Arkansas | 6,647,969 | 1,163,313 | 16,866,541 |
| Delaware | 1,849,281 | 373,665 | 19,390,310 |
| Florida | 2,880,058 | 514,685 | 6,981,904 |
| Georgia | 25,728,416 | 6,339,762 | 101,647,595 |
| Kentucky | 29,661,436 | 6,462,598 | 160,190,299 |
| Louisiana | 11,152,275 | 1,458,990 | 87,391,336 |
| Maryland | 7,997,634 | 1,954,800 | 89,641,988 |
| Mississippi | 19,403,662 | 3,636,582 | 60,501,561 |
| Missouri | 19,887,580 | 3,367,106 | 67,207,068 |
| N. Carolina | 17,717,647 | 5,767,866 | 71,823,298 |
| S. Carolina | 15,060,015 | 3,502,637 | 86,568,038 |
| Tennessee | 29,978,016 | 6,401,765 | 103,211,422 |
| Texas | 10,412,927 | 1,116,137 | 18,701,712 |
| Virginia | 33,656,659 | 7,502,986 | 223,423,315 |
| Total | \$ 253,723,687 | \$ 54,388,377 | \$ 1,183,995,274 |

3

Crops per Acre on the Average in Free and Slave States, 1850

| Free States | Wheat | Oats | Rye | Indian Corn | Irish Potatoes |
|---------------|-------|------|-----|-------------|----------------|
| Connecticut | 0 | 21 | 0 | 40 | 85 |
| Illinois | 11 | 29 | 14 | 33 | 115 |
| Indiana | 12 | 20 | 18 | 33 | 100 |
| Iowa | 14 | 36 | 0 | 32 | 100 |
| Maine | 10 | 0 | 0 | 27 | 120 |
| Massachusetts | 16 | 26 | 13 | 31 | 170 |
| Michigan | 10 | 26 | 0 | 32 | 140 |
| N. Hampshire | 11 | 30 | 0 | 30 | 220 |
| N. Jersey | 11 | 26 | 0 | 33 | 0 |
| New York | 12 | 25 | 17 | 27 | 100 |
| Ohio | 12 | 21 | 25 | 36 | 0 |
| Pennsylvania | 15 | 0 | 0 | 20 | 75 |
| Rhode Island | 0 | 30 | 0 | 0 | 100 |
| Vermont | 13 | 0 | 20 | 32 | 178 |
| Wisconsin | 14 | 35 | 0 | 30 | 0 |
| Total | 161 | 325 | 107 | 436 | 1503 |

| Slave States | Wheat | Oats | Rye | Indian Corn | Irish Potatoes |
|--------------|-------|------|-----|-------------|----------------|
| Alabama | 5 | 12 | 0 | 15 | 60 |
| Arkansas | 0 | 18 | 0 | 22 | 0 |
| Delaware | 11 | 20 | 0 | 20 | 0 |
| Florida | 15 | 0 | 0 | 0 | 175 |
| Georgia | 5 | 18 | 7 | 16 | 125 |
| Kentucky | 8 | 18 | 11 | 24 | 130 |
| Louisiana | 0 | 0 | 0 | 16 | 0 |
| Maryland | 13 | 21 | 18 | 23 | 75 |
| Mississippi | 9 | 12 | 0 | 18 | 105 |
| Missouri | 11 | 26 | 0 | 34 | 110 |
| N. Carolina | 7 | 10 | 15 | 17 | 65 |
| S. Carolina | 8 | 12 | 0 | 11 | 70 |
| Tennessee | 7 | 19 | 7 | 21 | 120 |
| Texas | 15 | 0 | 0 | 20 | 250 |
| Virginia | 7 | 13 | 5 | 18 | 75 |
| Total | 121 | 199 | 63 | 275 | 1360 |

Recapitulation of Crops per Acre on the Average, 1850

| Free States | | Slave States | |
|----------------|----------------------|----------------|----------------------|
| Wheat | 12 bushels per acre | Wheat | 9 bushels per acre |
| Oats | 27 bushels per acre | Oats | 17 bushels per acre |
| Rye | 18 bushels per acre | Rye | 11 bushels per acre |
| Indian Corn | 31 bushels per acre | Indian Corn | 20 bushels per acre |
| Irish Potatoes | 125 bushels per acre | Irish Potatoes | 113 bushels per acre |

TECHNOLOGY

In addition to buying more land and hiring more labor, a farmer may try to increase production through technological innovation. One way historians have tried to measure such change in the nineteenth century is by looking at patent information. The following tables, from Helper's *The Impending Crisis* and historian Gavin Wright's 1978 book *The Political Economy of the Cotton South*, provide comparative data on patents granted in the North and the South. Wright, one of the leading econometricians to study the nineteenth-century South, came to many of the same conclusions as Helper about the negative impact slavery had on technological investment and innovation in the South.

4

Patents Issued on New Inventions in the Free and Slave States, 1856

Source: Helper, *The Impending Crisis*, 294.

| Free States | | Slave States | |
|--------------|--------------|--------------|------------|
| California | 13 | Alabama | 11 |
| Connecticut | 142 | Arkansas | 0 |
| Illinois | 93 | Delaware | 8 |
| Indiana | 67 | Florida | 3 |
| Iowa | 14 | Georgia | 13 |
| Maine | 42 | Kentucky | 26 |
| Mass. | 331 | Louisiana | 30 |
| Michigan | 22 | Maryland | 49 |
| N. Hampshire | 43 | Mississippi | 8 |
| N. Jersey | 78 | Missouri | 32 |
| New York | 592 | N. Carolina | 9 |
| Ohio | 139 | S. Carolina | 10 |
| Pennsylvania | 267 | Tennessee | 23 |
| Rhode Island | 18 | Texas | 4 |
| Vermont | 35 | Virginia | 42 |
| Wisconsin | 33 | | |
| Total | 1,929 | Total | 268 |

5

***Patents Granted per Year for Mechanical
Devices for Grain and Corn Harvesting,
Threshing, and Cutting and for Cotton
Harvesting, Picking, and Cutting***

Source: Gavin Wright, *The Political Economy of the Cotton South: Households, Markets, and Wealth in the Nineteenth Century* (New York: W. W. Norton, 1978), 108.

| | Corn | Grain | Cotton |
|-----------|------|-------|--------|
| 1837-1849 | 3.5 | 6.5 | 0.2 |
| 1850-1860 | 18.5 | 10.5 | 2.6 |
| 1866-1879 | 39.5 | 38.5 | 13.2 |
| 1880-1890 | 44.2 | 59.5 | 30.5 |
| 1891-1900 | 53.9 | 56.0 | 22.9 |
| 1901-1914 | 69.1 | 52.2 | 53.6 |

Source: Jacob Schmookler, *Patents, Inventions, and Economic Change* (Cambridge, Mass.: Harvard University Press, 1972), 100-03.

WEALTH AND INCOME

The following tables compare per capita wealth and income in the South with that of other regions or nations. ("Per capita" means "per person.") The first table is from Helper's *The Impending Crisis*. The second and third tables are the work of econometricians Robert William Fogel and Stanley L. Engerman, whose 1974 book *Time on the Cross: The Economics of American Negro Slavery* challenged many of Helper's conclusions about the inefficiency of slave labor and ignited a controversy among historians about using econometrics to study American slavery.

6

Wealth Per Capita of Nine Free and Slave CitiesSource: Helper, *The Impending Crisis*, 347.

| Nine Free Cities | Population | Wealth | Wealth Per Capita |
|------------------|------------------|-------------------------|-------------------|
| New York | 700,000 | \$ 511,740,492 | \$ 731 |
| Philadelphia | 500,000 | 325,000,000 | 650 |
| Boston | 165,000 | 249,162,500 | 1,150 |
| Brooklyn | 225,000 | 95,800,440 | 425 |
| Cincinnati | 210,000 | 88,810,734 | 422 |
| Chicago | 112,000 | 171,000,000 | 1,527 |
| Providence | 60,000 | 58,064,516 | 967 |
| Buffalo | 90,000 | 45,474,476 | 505 |
| New Bedford | 21,000 | 27,047,000 | 1,288 |
| Total | 2,083,000 | \$ 1,572,100,158 | \$ 754 |

| Nine Slave Cities | Population | Wealth | Wealth Per Capita |
|-------------------|----------------|-----------------------|-------------------|
| Baltimore | 250,000 | \$ 102,053,839 | \$ 408 |
| New Orleans | 175,000 | 91,188,195 | 521 |
| St. Louis | 140,000 | 63,000,000 | 450 |
| Charleston | 60,000 | 36,127,751 | 602 |
| Louisville | 70,000 | 31,500,000 | 450 |
| Richmond | 40,000 | 20,143,520 | 503 |
| Norfolk | 17,000 | 12,000,000 | 705 |
| Savannah | 25,000 | 11,999,015 | 480 |
| Wilmington | 10,000 | 7,850,000 | 785 |
| Total | 787,000 | \$ 375,862,320 | \$ 477 |

7

Per Capita Income by Region for 1840 and 1860 in 1860 Prices

This table shows the growth in per capita income in several regions of the United States. The reference to 1860 prices in the table's title means that Fogel and Engerman have adjusted the figures in the 1840 column to reflect the dollar's value in 1860. This adjustment eliminates inflation as a factor in explaining the growth of these figures between 1840 and 1860. Fogel and Engerman also noted that their per capita income figures for the South included free and enslaved persons. In other words, if they had calculated per capita income for whites only, the South's would have been much higher than the North's.

Source: The tables in Sources 7 and 8 are from Robert William Fogel and Stanley L. Engerman, *Time on the Cross: The Economics of American Negro Slavery*, 2 volumes (Boston: Little, Brown and Company, 1974), 1:248.

| | 1840 | 1860 | Average Annual Rates of Change (Percent) |
|--------------------|-------|--------|--|
| National Average | \$ 96 | \$ 128 | 1.4 |
| North | 109 | 141 | 1.3 |
| Northeast | 129 | 181 | 1.7 |
| North Central | 65 | 89 | 1.6 |
| South | 74 | 103 | 1.7 |
| South Atlantic | 66 | 84 | 1.2 |
| East South Central | 69 | 89 | 1.3 |
| West South Central | 151 | 184 | 1.0 |

Northeast: ME, NH, VT, MA, RI, CT, NY, NJ, PA

North Central: MI, OH, IN, IL, WI, MO, IA, MN, ND, SD, NE, KS

South Atlantic: VA, MD, DE, DC, NC, SC, GA, FL

East South Central: KY, TN, AL, MS

West South Central: OK, AR, LA, TX

8

The Relative Level of the Per Capita Income of the South in 1860

Economists use “relative” measures as a way of creating a common yardstick for comparing data from different sources. In this case, Fogel and Engerman converted per capita income figures from different nations into U.S. dollars. They assigned the South’s per capita income the value of \$100 and measured the North’s and other nations’ per capita incomes relative to it. In other words, think of the \$100 value assigned to the South as a bar, the distance over which or under which indicates how another region’s or nation’s per capita income compared to that of the South in 1860.

Southern Per Capita Income Level = 100

| | |
|---------------|-------|
| Australia | \$144 |
| North | 140 |
| Great Britain | 126 |
| South | 100 |
| Switzerland | 100 |
| Canada | 96 |
| Netherlands | 93 |
| Belgium | 92 |
| France | 82 |
| Ireland | 71 |
| Denmark | 70 |
| Germany | 67 |
| Norway | 54 |
| Italy | 49 |
| Austria | 41 |
| Sweden | 41 |
| Japan | 14 |
| Mexico | 10 |
| India | 9 |

URBANIZATION AND MANUFACTURING

Economists interested in measuring the efficiency of the South’s slave labor system have also studied sectors of the economy other than agriculture. In particular, they have compared the rate of industrialization between the North and the South by looking at each region’s production of manufactured goods. They have also used urbanization, or the growth of city populations, as a measure of nonagricultural economic activity, because city dwellers typically earned their living in ways other than farming. These tables, from *The Impending Crisis* and *The Political Economy of the Cotton South*, provide data on such trends.

9

Product of Manufactures in the Free and Slave States, 1850Source: Helper, *The Impending Crisis*, 284.

| Free States | Value of Annual Products | Capital Invested | Hands Employed |
|--------------|--------------------------|-----------------------|----------------|
| California | \$ 12,862,522 | \$ 1,006,197 | 3,964 |
| Connecticut | 45,110,102 | 23,890,348 | 47,770 |
| Illinois | 17,236,073 | 6,385,387 | 12,065 |
| Indiana | 18,922,651 | 7,941,602 | 14,342 |
| Iowa | 3,551,783 | 1,292,875 | 1,707 |
| Maine | 24,664,135 | 14,700,452 | 28,078 |
| Mass. | 151,137,145 | 83,357,642 | 165,938 |
| Michigan | 10,976,894 | 6,534,250 | 9,290 |
| N. Hampshire | 23,164,503 | 18,242,114 | 27,092 |
| N. Jersey | 39,713,586 | 22,184,730 | 37,311 |
| New York | 237,597,249 | 99,904,405 | 199,349 |
| Ohio | 62,647,259 | 29,019,538 | 51,489 |
| Pennsylvania | 155,044,910 | 94,473,810 | 146,766 |
| Rhode Island | 22,093,258 | 12,923,176 | 20,881 |
| Vermont | 8,570,920 | 5,001,377 | 8,445 |
| Wisconsin | 9,923,068 | 3,382,148 | 6,089 |
| Total | \$ 842,586,058 | \$ 430,240,051 | 780,576 |

| Slave States | Value of Annual Products | Capital Invested | Hands Employed |
|--------------|--------------------------|----------------------|----------------|
| Alabama | \$ 4,538,878 | \$ 3,450,606 | 4,936 |
| Arkansas | 607,436 | 324,065 | 903 |
| Delaware | 4,649,296 | 2,978,945 | 3,888 |
| Florida | 668,338 | 547,060 | 991 |
| Georgia | 7,086,525 | 5,460,483 | 8,378 |
| Kentucky | 24,588,483 | 12,350,734 | 24,386 |
| Louisiana | 7,320,948 | 5,318,074 | 6,437 |
| Maryland | 32,477,702 | 14,753,143 | 30,124 |
| Mississippi | 2,972,038 | 1,833,420 | 3,173 |
| Missouri | 23,749,265 | 9,079,695 | 16,850 |
| N. Carolina | 9,111,245 | 7,252,225 | 12,444 |
| S. Carolina | 7,063,513 | 6,056,865 | 7,009 |
| Tennessee | 9,728,438 | 6,975,279 | 12,032 |
| Texas | 1,165,538 | 539,290 | 1,066 |
| Virginia | 29,705,387 | 18,109,993 | 29,108 |
| Total | \$ 165,413,027 | \$ 95,029,879 | 161,738 |

10 Regional Patterns of Manufacturing

This table provides regional comparisons of two measures of manufacturing: the per capita (per person) investment in manufacturing and the per capita output of manufacturing. In this table, the "South" includes all slaveholding states. The "Cotton South" refers to a smaller interstate region in which cotton production dominated the economy, primarily South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas, and Texas.

Source: Wright, *The Political Economy of the Cotton South*, 110.

| | Capital Invested by Manufacturing per Capita | | Value of Manufacturing Output per Capita | |
|----------------|--|---------|--|----------|
| | 1850 | 1860 | 1850 | 1860 |
| New England | \$57.96 | \$82.13 | \$100.71 | \$149.97 |
| Middle States | \$35.50 | \$52.21 | \$ 71.24 | \$ 96.28 |
| Northwest | \$11.70 | \$18.95 | \$ 26.32 | \$ 37.33 |
| Pacific States | \$10.39 | \$42.35 | \$ 84.83 | \$129.04 |
| South | \$ 7.60 | \$10.54 | \$ 10.88 | \$ 17.09 |
| Cotton South | \$ 5.11 | \$ 7.20 | \$ 6.83 | \$ 10.47 |
| U.S. | \$22.73 | \$32.12 | \$ 43.69 | \$ 59.98 |

Source: U.S. Bureau of the Census, *Compendium of 1850 Census*, 179; Eighth U.S. Census, *Manufactures*, 725; Ninth Census, *Compendium*, 799.

11 Regional Patterns of Urbanization by Percent of Population

This table shows the growth in the urban population in different regions of the United States between 1820 and 1860.

Source: Wright, *The Political Economy of the Cotton South*, 110.

| | 1820 | 1830 | 1840 | 1850 | 1860 |
|--------------------|------|------|------|------|------|
| New England | 10.5 | 14.0 | 19.4 | 28.8 | 36.6 |
| Middle Atlantic | 11.3 | 14.2 | 18.1 | 25.5 | 35.4 |
| East North Central | 1.2 | 2.5 | 3.9 | 9.0 | 14.1 |
| West North Central | 0 | 3.5 | 3.9 | 10.3 | 13.4 |
| South Atlantic | 5.5 | 6.2 | 7.7 | 9.8 | 11.5 |
| East South Central | 0.8 | 1.5 | 2.1 | 4.2 | 5.9 |

Source: Douglass North, *The Economic Growth of the United States, 1790-1860* (1961; New York: W.W. Norton, 1966), 258.

Analyzing Economic Data

1. Using your notes on page 186, what types of methods and sources were used in compiling the data presented in these tables? Depending on the types of sources they are using, do you find some of the tables more convincing than others? Why or why not?
2. What factors other than type of labor (slave or free) might have accounted for the differences in Helper's totals for Northern and Southern agricultural output in Sources 1, 2, and 3? Why would or why wouldn't a per acre figure, such as that provided in Source 3, be a more accurate measure of the efficiency of free versus slave labor than state-by-state totals, such as those given in Source 2?
3. Compare Helper's per capita wealth figures in Source 6 with the per capita income figures provided by Fogel and Engerman in Sources 7 and 8. If Helper wanted his figures to prove the superiority of free over slave labor, why was it to his advantage to measure the per capita wealth of urban populations rather than the entire Northern and Southern populations? Likewise, why do you suppose Fogel and Engerman emphasized regional and national comparisons in their per capita income figures?
4. What does the data on patents in Sources 4 and 5 tell you about how Southerners and Northerners chose to invest the capital they put into increasing agricultural production? What sort of incentive did a Northern farmer have for investing in new technology that a Southern farmer did not?
5. What does the data on urbanization and manufacturing in Sources 9, 10, and 11 tell you about the comparative positions of the Northern and Southern economies in these categories? Why would measures of urban population growth and manufacturing output be important in discussions of the efficiency of slave versus free labor?
6. Having reviewed the information provided in these tables, describe the overall economic impact of slavery on the antebellum South. If it was negative, why did Southerners use this labor system for so long?

The Rest of the Story

The divergent paths toward economic development taken by the North and the South during the first half of the nineteenth century had important ramifications for each region. On the eve of the Civil War, the South led the world in cotton production, but it lagged behind the North in population, manufacturing, and wealth. During the war, the North's superior industrial capacity sustained the war effort, while the South's economy withered under a Union naval blockade that closed access to international markets. Cotton planters' profits evaporated during the war, and emancipation destroyed the property value they claimed in their slaves. An economic system that had prospered in the South since the 1790s utterly collapsed by 1865. Recovery came slowly. In